4D Draw version 1.1 Addendum

4D Draw Manual Errata

4D Draw Reference Manual

Page 33:
Point 1 reads "Choose Send to Back from the 4D Draw Object menu". This should actually read "Choose Send to Back from the 4D Draw Arrange menu".

Page 52:
Point 5 reads "Drag the new vertex 101/2 inches to the left." This should read "Drag the new vertex 1 inch to the left."

4D Draw version 1.1 is the new version of 4D Draw, the drawing module for 4th Dimension and 4D Server. While taking advantage of new features of 4th Dimension version 3 and 4D Server, 4D Draw remains completely compatible with 4th Dimension version 2.

You can use 4D Draw version 1.1 with the following versions of 4th Dimension and 4D Server:

1. 4th Dimension version 3.0.2 or greater
2. 4th Dimension version 2.2.3 or greater
3. 4D Server version 1.0.2 or greater

This addendum describes the new features of 4D Draw, including the following:

1. Modifications to dialog boxes
2. New menu items
3. New commands
4. Modifications to existing commands
5. New codes for attributes, menu items, errors, and events
6. Additional changes

In addition to its new features, 4D Draw has a new interface. The appearance of many 4D Draw dialog boxes has changed in version 1.1. However, although the dialog boxes may appear different, they will function the same unless a new feature has been added. Most dialog boxes now have an icon and the dialog box name in the upper-left corner to help you easily identify the dialog box.

Installing 4D Draw

You can operate 4D Draw in a single-user environment with 4th Dimension or 4D Runtime, or in a multi-user environment with 4D Server.

For either environment, you must first install 4D Draw in one of the following locations before you can use it:

- External procedure (Proc.Ext) file
- Database structure file
- 4th Dimension or 4D Runtime application file

The installation location has no effect on how 4D Draw operates in a database. 4D Draw's performance is exactly the same wherever it may be installed. 4D Draw adds about 400K to the size of the database.

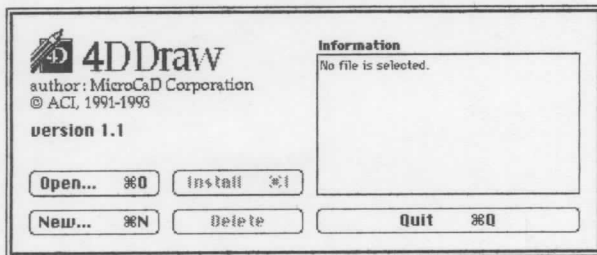You can remove 4D Draw and reinstall it at any time in a different location without affecting the data in any way.

Installing 4D Draw in a Database

You can install 4D Draw in a database structure file or in any 4th Dimension application when the database is closed.

To install 4D Draw, follow these steps:

**1. Launch the 4D Draw Installer.**

The installation screen appears.

The message area says, "No file is selected." Later, this area will identify the file in which you are installing 4D Draw.

2. Click New to create a new Proc.Ext file or click Open to select a 4th Dimension structure file, a 4th Dimension or 4D Runtime application file, or an existing Proc.Ext file.

If you clicked New:

A Save File dialog box appears.
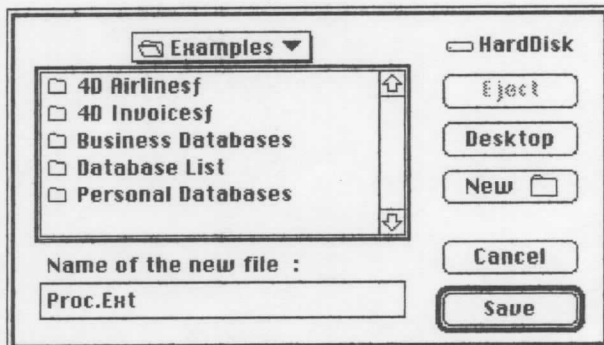
"Proc.Ext" automatically appears in the filename area. The standard Macintosh file dialog box allows you to place the Proc.Ext file in any folder on your hard disk. Normally, you keep it in the same folder as the 4D Draw module or your 4th Dimension application, placing copies of the file in database folders.
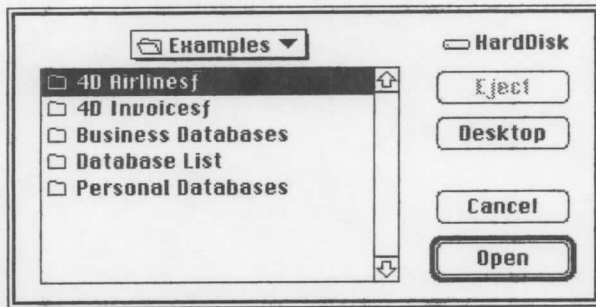
Click Save after you have chosen the location for 4D Draw.

4D Draw creates an empty Proc.Ext file.

The message area on the 4D Draw installation screen shows that the Proc.Ext file you created is currently selected and that 4D Draw is not yet installed.

If you clicked Open:

An Open File dialog box appears.

1. **Select the file in which you want to install 4D Draw.**

2. **Click Open.**

4D Draw opens the file.

If you have never installed 4D Draw in the selected file, the message area on the 4D Draw installation screen indicates that this file is currently selected and that 4D Draw has not yet been installed.

If you have already installed 4D Draw in the selected file, the message area on the 4D Draw installation screen indicates that this file is currently selected and that 4D Draw has already been installed.

3. **Click Install on the installation screen.**

4D Draw is now being installed in the specified file. This process takes a few seconds.

If you previously installed 4D Draw in the selected file, clicking the Install button deletes the old version of 4D Draw and installs the new version. This process is indicated in the message area on the 4D Draw installation screen.

4. **When the message area shows that installation has been successful, click Quit.**

The 4D Draw installation screen is closed and you are returned to the desktop.

Note: If you install 4D Draw in a Proc.Ext file, you can add additional modules to the Proc.Ext file at this point or you can place a copy of this file in a database folder. To add another module to this file, refer to the module's installation manual. After adding another module to the Proc.Ext file, place a copy of this updated file in the appropriate database folder.
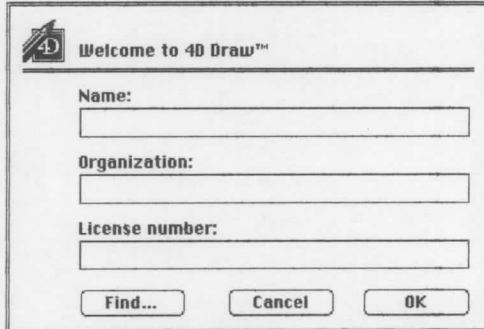
Launching 4th Dimension After Installation

1. Launch 4th Dimension.

An Open File dialog box appears.

2. Open the database in which you want to use 4D Draw.

The Welcome to 4D Draw dialog box appears.

```
╔═══════════════════════════════════════════╗
║ ▨  Welcome to 4D Draw™                     ║
║  ─────────────────────────────────────     ║
║   Name:                                     ║
║   ┌──────────────────────────────────┐     ║
║   └──────────────────────────────────┘     ║
║   Organization:                             ║
║   ┌──────────────────────────────────┐     ║
║   └──────────────────────────────────┘     ║
║   License number:                           ║
║   ┌──────────────────────────────────┐     ║
║   └──────────────────────────────────┘     ║
║  ( Find... )   ( Cancel )   (   OK   )      ║
╚═══════════════════════════════════════════╝
```

3. Enter your name, organization, and 4D Draw license number.

If you are upgrading from version 1.0 of 4D Draw, you can automatically enter your license number by clicking the Find... button and opening a copy of 4D Draw version 1.0 from the original program disk.

If you do not have an old copy of 4D Draw, refer to your 4D Draw Registration card for the license number.

If you enter this number incorrectly in the dialog box, 4D Draw will not work in your database.

4. Click OK.

Installing 4D Draw in a Database on the Server

The basic steps for installing 4D Draw in 4D Server are the following. For each type of installation, see the "Installing 4D Draw in a Database" section for complete details.

1. Install 4D Draw in one of the following locations on the server:

- Proc.Ext file
- Database structure file

Note: If you want to use 4D Draw on 4D Server, it is recomended that you install 4D Draw in the database structure file for a quicker creation of the ".Res" file on 4D Client.
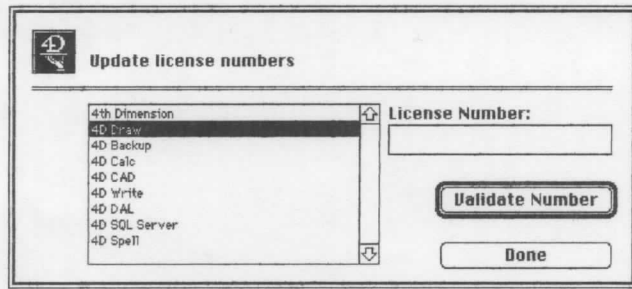
2. Launch 4D Server.

A standard Macintosh Open File dialog box appears.

3. Open the file in which 4D Draw has been installed.

4. Choose Update License from the File menu.

The Update Number of Licenses dialog box appears.

5. Choose 4D Draw from the list.

Note: Please refer to your 4D Server Reference about controlling external package access.

6. Enter the 4D Draw license number in the License Number area.

Refer to your 4D Draw Registration card for the license number.

7. Click Validate Number.

An alert box appears if you type the license number incorrectly. After you click OK in the alert box, correctly enter the 4D Draw license number in the Update Number of Licenses dialog box.
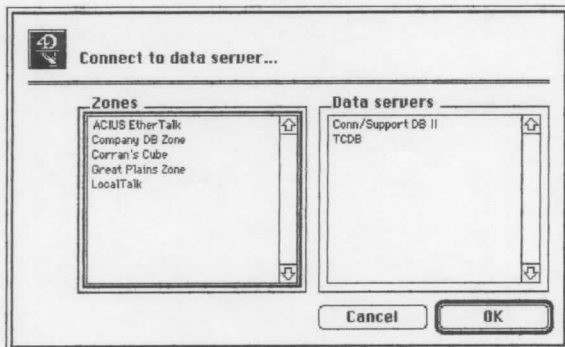
8. Click Done.

Connecting the Client to the Server After Installation

To connect the client computer to the server.

1. Launch 4D Client from a client computer.

The Connect to data server dialog box appears.

2. Choose the appropriate zone from the Zones list.

Note: If there is only one zone in your network, you will see the single zone dialog box when connecting to 4D Server.

3. Choose from the Data servers list the database in which 4D Draw is installed.

4. Click OK to open the database.

4D Client automatically downloads resources from the server to the client computer after you connect to the database for the first time. 4D Client also downloads 4D Draw to the client computer.

Enabling 4D Draw in a Database

If you installed 4D Draw in one of the following locations, you must launch the database for which 4D Draw is installed to enable this module:

- Database structure file
- Any 4th Dimension application file
- Proc.Ext file while the database was not open

If you installed 4D Draw in a Proc.Ext file while the database was open, close and reopen the database to enable 4D Draw.

The following steps describe the fastest way to close and reopen a database:

1. Choose Open Database from the File menu.

A standard Macintosh file dialog box appears.

2. Open the database.

4th Dimension saves and closes the current database and then reopens it.

After you install 4D Draw and open or reopen the database, 4D Draw appears in the Windows menu of the User environment, indicating that 4D Draw is enabled and available.

Removing 4D Draw

If you decide to use 4D Draw from another location, if you have inadvertently installed 4D Draw in two locations, or if you need to remove 4D Draw for any other reason, you can do so by completing the following steps.

1. Launch the 4D Draw Installer.

The installation screen appears.
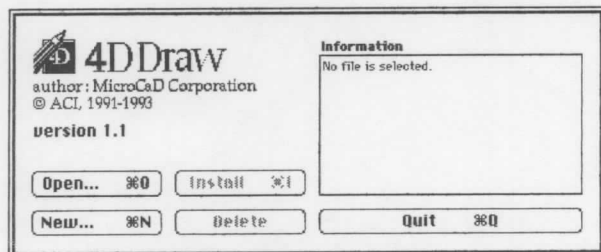
The message area says, "No file is selected." Later, this area will identify the file from which you are removing 4D Draw.

2. Click Open.

4D Draw displays a standard Macintosh file dialog box.

3. Select the file from which you want to remove 4D Draw.

4. Click Open.

4D Draw opens the file.

The message area on the 4D Draw installation screen indicates the version of 4D Draw installed on the opened file.
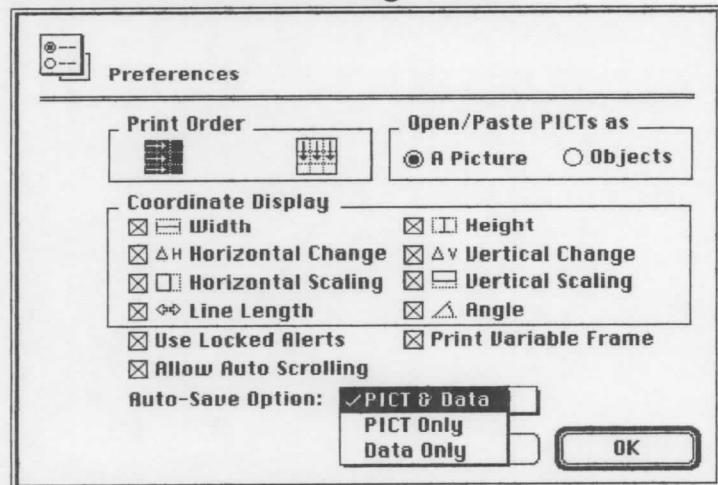
5. Click Delete.

When 4D Draw has been deleted from the 4th Dimension file, a message appears in the message area informing you that 4D Draw has been successfully removed.

New Features of 4D Draw

1. Modifications to Dialog Boxes

Preferences Dialog Box

The Preferences dialog box contains a new elelement: the Auto-Save Option pop-up menu.

The three options provided by the pop-up menu are the following:

PICT & Data: This option saves both the image and the internal data used to reconstruct the image.

PICT only: This option saves only the image (PICT). Objects can no longer be manipulated individually.

Data only: This option saves only the data concerning the objects in the 4D Draw area. The image is later reconstructed using the information in the saved data. This save option is the quickest and uses the least amount of memory.

NOTE: You can also select an auto-save option by using the DR SET PREFERENCES and DR GET PREFERENCES commands.

Memory Alert Dialog Box

If a document in a 4D Draw area is too large to be auto-saved using the available memory, the following dialog box is displayed.
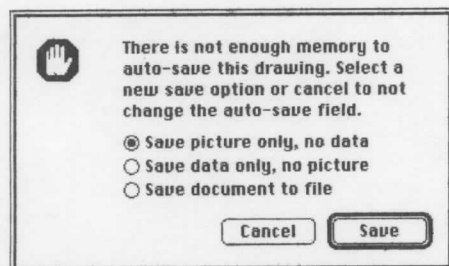
The dialog box provides the following options:

Save picture only, no data: This option saves the object's image as a PICT without the internal data that can be used to reconstruct the image. If the auto-save field is being displayed as a picture field, the field will show the image. If the auto-save field is opened in a 4D Draw area, you will no longer be able to select the objects individually. This operation is irreversible.

Save data only, no picture: This option saves the data without the image, using the least amount of memory. 4D Draw saves an empty image in the auto-save field, but saves all data necessary to reconstruct the image. When you reopen the document, all the objects will be recreated. If the field being used to auto-save the document is being displayed, it will be blank.

Save document to file: This option allows you to save the document as a file on disk. It is the same as choosing **Save As** from the **File** menu.

If you click the Cancel button, the document will not be saved.

Paste Field Dialog Box

The Paste Field dialog box allows you to paste a reference from a specific file and field in the database. A new pop-up menu at the top of the dialog box now allows you to switch from one file to another.
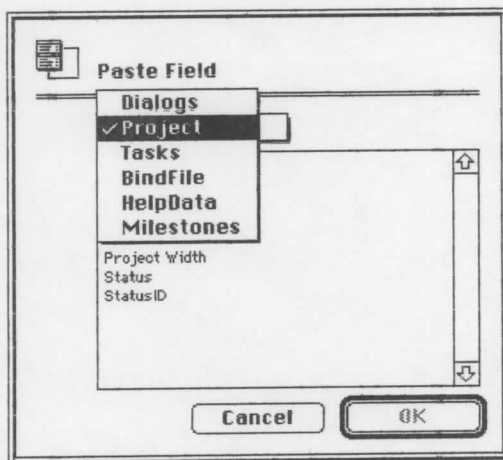

Invisible files and fields, which are available in 4th Dimension version 3, do not appear in this dialog box. For more information on invisible files and fields, refer to the 4th *Dimension Design Reference* manual.

Create Merge Selection Dialog Box

Version 1.1 of 4D Draw allows you to perform a print merge of a 4D Draw document containing 4D fields. To perform a print merge, choose **Print Merge** from the 4D Draw **File** menu.

When you choose this menu item, the Create Merge Selection dialog box appears.
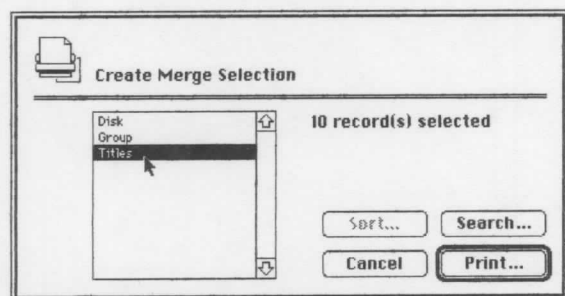
This dialog box contains a list of available files. To select the 4ᵗʰ Dimension file for which you wish to print the mail merge, select the filename in the selection area. By default, the records in the current selection of the file will be included in the print merge.

If you wish to perform a more targeted mailing (i.e. to select only certain records based on certain criteria), click the **Search** button. The Search editor appears, allowing you to search for certain records in your database.
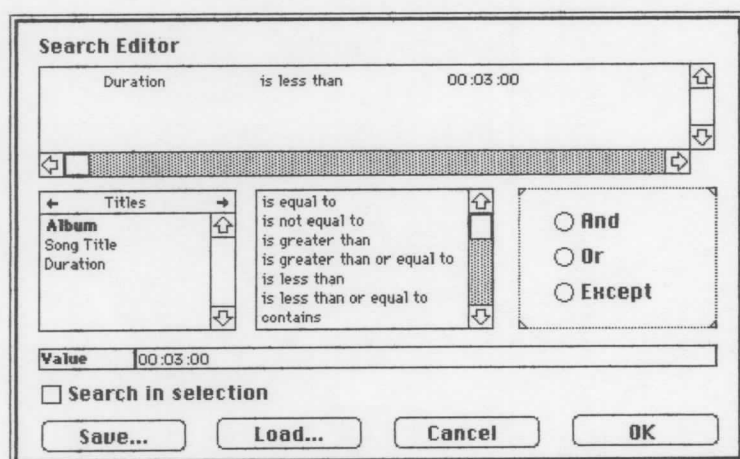
Once you have performed the search, the Print Merge dialog box appears again. If you wish to sort the records before printing, click the Sort button. The 4D Sort editor appears.
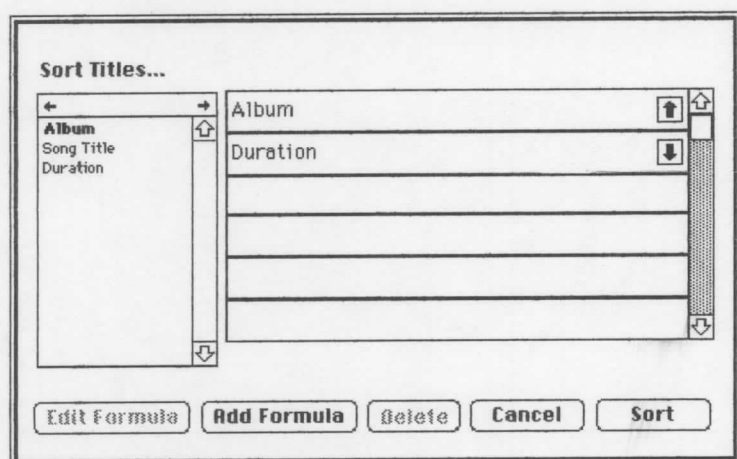
Once you have entered the Sort criteria, click the Sort button to perform the sort and return to the Create Merge Selection dialog box. If you click OK in the Create Merge Selection dialog box, the documents will be printed in the order determined by the sort.

To start printing, click **OK**.

Binding Dialog Box

The new **Binding** dialog box appears when you choose **Binding** from the **Database** menu. It allows you to construct links between the fields in the current record and the attributes of the objects selected in the 4D Draw area.

Using the Binding dialog box, you can link the value of a field to an object attribute, such as width, height, rotation, or fill color. The binding can work in either of two ways:
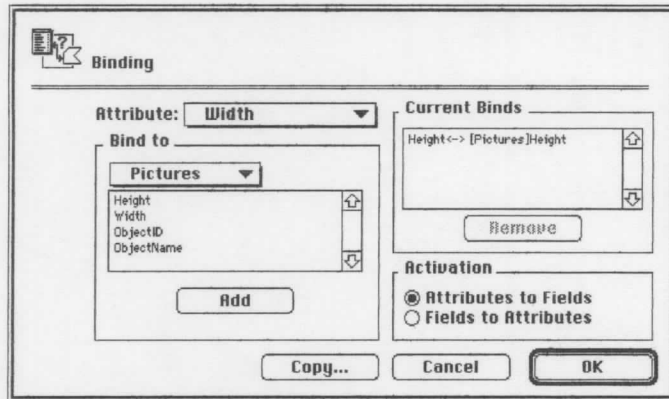
- When you enter a value in the field and press Tab, the objects selected in the 4D Draw area are modified.
- When you modify the objects in the 4D Draw area, the value of the field changes.

For instance, to bind the width of an object to the Width field, choose **Binding** from the **Database** menu. Select Width from the Attribute pop-up menu. Select the Width field in the Bind to area. If you have multiple files, you can use the Files pop-up menu to select the file whose fields you wish to display. Click Add to add the bind to the list of binds in the Current Binds area.

In the Activation area in the Binding dialog box, you can choose whether a change to the value in the field changes the attribute of the object, or a change in the 4D Draw object changes the value in the field. This option cannot be changed once the Bind has been activated.

All current binds are displayed in the Current Binds area in the Binding dialog box. You can delete a bind by selecting it in the Current Binds area and clicking the Remove button.

To activate the binds in the Current Binds area, click the OK button.

The binds you create in the Binding dialog box are temporary and will not be saved when you save the record. To save the binds, you must create the Bind procedurally in a layout procedure. To help write the layout procedure, 4D Draw allows you to copy the procedure for the binds you created in the Binding dialog box to the Clipboard.

To copy the binding procedure to the Clipboard, click the Copy button. When you click the Copy button, the following dialog box appears.

```
4D Draw will generate the appropriate
bind commands and copy them to the
clipboard.

Bind variable name:

vBind

        [ Cancel ]    [   OK   ]
```
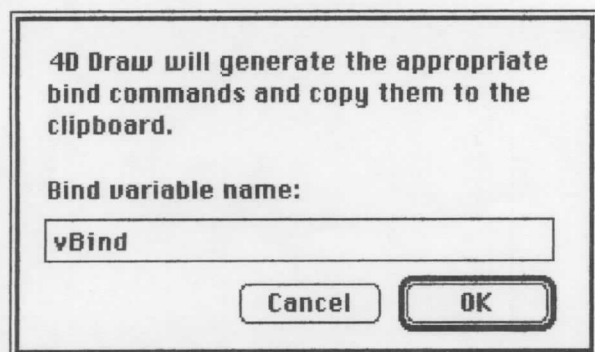
Enter the variable name you wish to use for the bind and click OK. This variable name is used in the commands 4D Draw creates. You can paste the commands from the Clipboard directly into a procedure window.

The bind information copied to the clipboard defines the bind variable. You must add other appropriate commands to make the procedure work. For instance, in the following illustration, the Clipboard contained the lines:

vBind:= *DR New Bind*
DR ADD TO BIND (vBind;6;1;3)
DR ADD TO BIND (vBind;5;1;4)
DR ADD TO BIND (vBind;11;1;5)

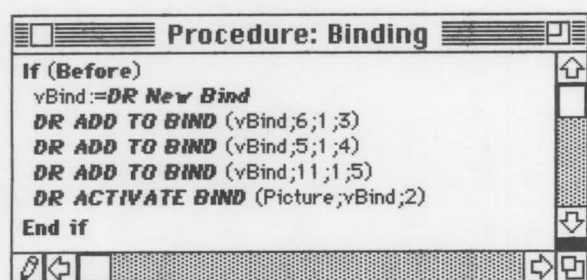The first line and the last two lines of code below must be added to make the *Binding* procedure work properly.

```
▤▯▥▥▥▥ Procedure: Binding ▥▥▥▥▯▤
If (Before)
 vBind :=DR New Bind
 DR ADD TO BIND (vBind;6;1;3)
 DR ADD TO BIND (vBind;5;1;4)
 DR ADD TO BIND (vBind;11;1;5)
 DR ACTIVATE BIND (Picture;vBind;2)
End if
```

For more information about binding, refer to the *4D Draw Language Reference*.

2. New Menu Items

This section describes the new menu items in 4D Draw version 1.1. The actions performed by these menu items can also be performed using commands. For more information on the equivalent commands, refer to the "New Commands" section.

The **Print Merge** and **Binding** menu items are discussed in the previous section.

Object Menu

Hide Menu Item
The **Hide** menu item is enabled whenever an object is selected. It allows you to hide an object (i.e. to make the object invisible to the user).

Show All Menu Item
The **Show All** menu item is connected to the **Hide** menu item. It is enabled whenever any objects have been hidden in the document. Choosing the **Show All** menu item shows all the hidden objects in the document.

Arrange Menu

Add to Background Menu Item
The **Add to Background** menu item allows you to add the selected objects to the background of a document. The selected objects become part of the document page and can be modified only procedurally until you release the background. You can

DR RELEASE BACKGROUND

DR RELEASE BACKGROUND (*Area*)

Parameters	Type	Description
Area	Longint variable	4D Draw area

This command releases the objects on the background of the 4D Draw area *Area* and replaces them in their original positions. This command has the same function as the **Release Background** menu item.

DR REMOVE FROM BACKGROUND

DR REMOVE FROM BACKGROUND (*Area;ObjectID*)

Parameters	Type	Description
Area	Longint variable	4D Draw area
ObjectID	Integer	ID number of the object

This command releases the specified object from the background of *Area*.

DR PRINT BACKGROUND

DR PRINT BACKGROUND (*Area;Status;PrintDialog*)

Parameters	Type	Description
Area	Longint variable	4D Draw area
Status	Integer	0 = Off, 1 = On
PrintDialog	Integer	0 = Without dialog box, 1 = With dialog box

This command allows you to print only the objects on the background of *Area*.

If *Status* equals 1, a dialog box appears, allowing the user to cancel the printing in progress by pressing Command-Period. If the user cancels printing, an error 55 is returned by DR Error. If *Status* equals 0, this dialog is not displayed and printing cannot be cancelled.

PrintDialog determines whether the standard print dialog box is displayed or not.

If *PrintDialog* equals 0, the standard Print File dialog box is not displayed, and printing begins immediately. If *PrintDialog* equals 1, the standard Print File dialog box is displayed.

DR PRINT FOREGROUND

DR PRINT FOREGROUND (*Area;Status;PrintDialog*)

Parameters	Type	Description
Area	Longint variable	4D Draw area
Status	Integer	0 = Off, 1 = On
PrintDialog	Integer	0 = Without dialog box, 1 = With dialog box

This command is the reverse of the previous command; it allows you to print the objects that appear on the foreground.

If *Status* equals 1, a dialog box appears, allowing the user to cancel the printing in progress by pressing Command-Period. If the user cancels printing, an error 55 is returned by DR Error. If *Status* equals 0, this dialog is not displayed and printing cannot be cancelled.

PrintDialog determines whether the standard Print File dialog box is displayed or not.

If *PrintDialog* equals 0, the standard Print File dialog box is not displayed, and printing begins immediately. If *PrintDialog* equals 1, the standard Print File dialog box is displayed.

release the background by either choosing **Release Background** from the **Layout** menu or executing the DR RELEASE BACKGROUND command.

Layout Menu

Release Background Menu Item
The **Release Background** menu item is related to the **Add to Background** menu item. It allows you to release the objects on the background, allowing them to be modified and selected.

3. New Commands

Twenty-one new commands are available in 4D Draw 1.1. In addition to the new commands, there is a new specification for the *Area* parameter: the Default Area.

Default Area
The default area is a template in RAM that can be used to set the default attributes of all 4D Draw areas and external windows. Any command that can be executed on a 4D Draw area can be executed on the default area by setting the Area parameter to -1. You can use procedures to perform operations on the default area as you would with any other area.

By using the default area, you can eliminate the unnecessary execution of code for 4D Draw areas. For example, in the previous version, if you wanted all 4D Draw areas and external windows to appear without scroll bars, you had to turn the scroll bars off in the Before phase of each layout. The code in the Before phase was executed each time the layout was opened. In addition, the previous version did not allow you to modify the attributes of 4D Draw external windows.

Using the new version of 4D Draw, you can set the attributes of both 4D Draw areas and external windows. The default area is automatically used as a template whenever a layout or external window is opened. Since no code has to be executed, the default area provides a quick way to customize the drawing area.

If you do not want the default area to apply to every 4D Draw area, you can override it by creating a template on disk for the 4D Draw area or by placing the appropriate code in the Before phase of the layout. A template on disk or code in the Before phase of a layout takes precedence over the default area.

DR ADD TO BACKGROUND

DR ADD TO BACKGROUND (*Area; Scope*)

Parameters	Type	Description
Area	Longint variable	4D Draw area
Scope	Longint	-1 = All objects, 0 = Selected objects, >0 =ID

This command adds the objects specified by *Scope* to the background of *Area*. This command has the same function as the **Add to Background** menu item. The object(s) specified by *Scope* become part of the area's background and are no longer selectable. In order for the user to modify the object(s), you must release the background using either the **Release Background** menu item or the DR RELEASE BACKGROUND command. You can modify objects only procedurally when they are on the background.

DR SET HANDLE STATE

DR SET HANDLE STATE (*Area;Scope;Action*)

Parameters	Type	Description
Area	Longint variable	4D Draw area (-1 = all areas)
Scope	Long Integer	-1 = All objects, 0 = Selected objects, > 0 = ID
Action	Integer	1 = Show, 0 = Hide

This command allows you to determine whether or not the handles for the objects in *Scope* are visible. Handles are the black squares that appear around the object when it is selected, allowing the user to resize the object. If *Action* equals 1, the objects' handles will be visible. If *Action* equals 0, the objects' handles will be invisible.

The state of the handles is stored in memory, even after you quit the database.

DR Get handle state

DR Get handle state (*Area;Scope*) -> Integer

Parameters	Type	Description
Area	Longint variable	4D Draw area
Scope	Long Integer	-1 = All objects, 0 = Selected objects, 0 = ID

This function returns 0 or 1, depending on whether the handles for the objects in *Scope* are invisible or visible.

DR SET ATTRIBUTE LOCK

DR SET ATTRIBUTE LOCK (*Area;Scope;AttributeNum;LockState*)

Parameters	Type	Description
Area	Longint variable	4D Draw area (-1 = all areas)
Scope	Long Integer	-1 = All objects, 0 = Selected objects, >0 = ID
AttributeNum	Integer	Number of the attribute to lock (0 to 28)
LockState	Integer	0 =Unlock, 1 = Lock, 2 = Toggle

This command locks or unlocks the *AttributeNum* attribute for the objects in *Scope*.

The *AttributeNum* parameter can take any integer between 0 and 28. For more information on the attribute codes, refer to Appendix C of the *4D Draw Language Reference*. Two new codes are available with version 1.1 of 4D Draw; these codes are listed in the "New Codes" section.

DR Get attribute lock

DR Get attribute lock (*Area;Scope;AttributeNum*) ->Integer

Parameters	Type	Description
Area	Long Integer	4D Draw area (-1 = all areas)
Scope	Long Integer	-1 = All objects, 0 = Selected objects, >0 = ID
AttributeNum	Integer	Number of the attribute (0 to 28)

This function returns the state of the *AttributeNum* attribute. The *AttributeNum* parameter can be any integer between 0 and 28. For more information on the attribute codes, refer to Appendix C of the *4D Draw Language Reference*. Two new codes are available with version 1.1 of 4D Draw; these codes are listed in the "New Codes" section.

If the value returned equals 0, the *AttributeNum* attribute is not locked.
If the value returned equals 1, the *AttributeNum* attribute is locked.

DR ON MENU

DR ON MENU (*Area;Procedure*)

Parameters	Type	Description
Area	Longint variable	4D Draw area (-1 = all areas)
Procedure	String	Name of the procedure to call

This command executes *Procedure* each time a menu item is activated, whether it be in the User or Runtime environments or via the DR EXECUTE MENU command, as long as the menu item is called in *Procedure*.

The called procedure takes three parameters:
$1 : A Long integer containing the ID for the 4D Draw area
$2 : A Long integer containing the menu item number
$3 : A Long integer containing the number of the modifier key pressed

The $3 parameter corresponds to one of the following modifier keys (or combination of modifier keys):

0 = No modifier
1 = Command key
2 = Shift key
4 = Option key
8 = Control key

If a combination of modifier keys is pressed, the values are added together and then passed as a parameter. For example, a value of 10 indicates that the user pressed the Shift and Control keys while selecting the menu item.

NOTE: *If you are going to compile your database, you must declare the $1, $2, and $3 variables as Long integers in the procedure executed by DR ON MENU.*

Example

In the following example, a different procedure is called depending on the combination of keys pressed. To install the *OnMenu* procedure for all 4D Draw areas, you would execute the following procedure:
DR ON MENU (-1;"OnMenu")

The *OnMenu* procedure is as follows:

```
C_LONGINT ($1;$2;$3)
Case of
        :($3=0)             `No modifier key pressed
        NoKey($1;$2;$3)
        :($3=1)             `Command key pressed
        Command ($1;$2;$3)
        :($3=2)             `Shift key pressed
        Shift ($1;$2;$3)
        :($3=3)             `Command and Shift keys pressed
        CommandShift ($1;$2;$3)
        :($3=4)             `Option key pressed
        Option ($1;$2;$3)
        :($3=5)             `Command and Option keys pressed
        CommandOption ($1;$2;$3)
        :($3=6)             `Shift and Option keys pressed
        ShiftOption ($1;$2;$3)
        :($3=7)             `Command, Shift, and Option keys pressed
        ComShiftOption ($1;$2;$3)
        :($3=8)             `Control key pressed
        Control ($1;$2;$3)
        :($3=9)             `Command and Control keys pressed
        CommandControl ($1;$2;$3)
        :($3=10)            `Shift and Control keys pressed
        ShiftControl ($1;$2;$3)
        :($3=11)            `Shift, Control, and Command keys pressed
        ShiftContlCom ($1;$2;$3)
        :($3=12)            `Option and Control keys pressed
        OptionControl ($1;$2;$3)
        :($3=13)            `Command, Option, and Control keys pressed
        ComOptContrl ($1;$2;$3)
        :($3=14)            `Shift, Option, and Control keys pressed
        ShiftOptContrl ($1;$2;$3)
        :($3=15)            `Command, Shift, Option, and Control keys pressed
        ComShiftOptContrl ($1;$2;$3)
End Case
```

The *NoKey* procedure allows you to retrieve the name and location of the documents saved or opened by the user.

```
C_LONGINT ($1;$2;$3)
If ($1=MyArea)
        `MyArea is the ID of the 4D Draw area
    If (($2=1002) | ($2=1003))
        C_TEXT (OpenDoc;SaveDoc)
        OpenDoc:=""
        SaveDoc:=""
        If ($2=1002)
            DR OPEN DOCUMENT ($1;OpenDoc;0)
                `OpenDoc contains the access path of the open document
        Else
            DR SAVE DOCUMENT ($1;SaveDoc;"4DRW")
                `SaveDoc contains the access path of the saved document
        End if
    Else
        DR DO COMMAND ($1;$2)
    End if
Else
    DR DO COMMAND ($1;$2)
End if
```

DR HIDE

DR HIDE (*Area;Scope;Mode*)

Parameters	Type	Description
Area	Longint variable	4D Draw area
Scope	Long integer	-1 = All objects, 0 = Selected objects, >0 = ID
Mode	Integer	1 = Hide, 0 = Show

This command hides or shows the objects in *Scope*. The command performs the same function as the **Hide/Show All**menu item does for a selection.

If *Scope* equals 0 and *Mode* equals 0, all hidden objects remain selected. Be sure to deselect the objects before returning control to the user or applying another command.

Example

```
DR HIDE (MyArea;0;1)    `Hide the selection
DR SET REFNUM (MyArea;0;7)        `Set the reference number for the selection
DR SELECT (MyArea;0;0)            `Deselect the hidden objects
```

DR Objects to Bitmap

DR Objects to Bitmap (*Area;Scope;Option*) -> Long integer

Parameters	Type	Description
Area	Longint variable	4D Draw area
Scope	Long Integer	-1 = All objects, 0 = Selected objects, >0 = ID
Option	Integer	Option for converting the objects in *Scope*

If *Option* equals 0, the objects in *Scope* are converted to a black and white bitmap.
If *Option* equals 1, the objects in *Scope* are converted to a color bitmap. The color bitmap uses the number of colors selected in the Monitor Control panel for your Macintosh. The color bitmap is automatically converted to an object of type Picture so that even if a different number of colors is chosen in the Monitor Control panel, the bitmapped image will not be affected.

In both cases, the function returns the ID number of the object of type picture created by DR Objects to Bitmap.

NOTE: *The conversion of the objects to a bitmapped image is irreversible. The bitmapped image loses all of its former attributes, including its name.*

DR ADD TO BITMAP

DR ADD TO BITMAP (*Area;Scope;ObjectID*)

Parameters	Type	Description
Area	Longint variable	4D Draw area
Scope	Long integer	-1 = All objects, 0 =Selected objects, >0 = ID
ObjectID	Long integer	ID number of the bitmapped image

This command adds the objects in *Scope* to the bitmapped image identified by *ObjectID*.

NOTE: *The conversion of the objects to a bitmapped image is irreversible. The bitmapped image loses all of its former attributes, including its name.*

DR Place field

DR Place field(*Area; FileNum; FieldNum; Format; Location*) -> Long integer

Parameters	Type	Description
Area	Longint variable	4D Draw area
FileNum	Integer	File Number
FieldNum	Integer	Field Number
Format	String	Format to be used, (as for the DR SET FORMAT command, it is not used if *FieldNum* is of type Picture)
Location	Integer	0=Normal, 1=Centered, 2=Origin

This command returns the ID number of the object created by inserting the *FieldNum* field from the *FileNum* file. The object should be of type picture if it is a picture field and of type text in all other cases. DR Place field works exactly like the **Insert Field...** menu item, except that it allows you to choose the location of the field inside *Area*.

If *Location* equals 0, the field is placed at the point of the last mouse click in the 4D Draw area (as during a **Paste** or while using the **Insert Field...** menu item).
If *Location* equals 1, the field is centered in the visible portion of the 4D Draw area.
If *Location* equals 2, the field is placed at the origin, i.e at the point with coordinates (0,0).

DR Get text width

DR Get text width (*Area; Scope*) -> Integer

Parameters	Type	Description
Area	Longint variable	4D Draw area
Scope	Long integer	-3 = Selected characters, -1 = All characters, 0 = Selection, >0 = ID

This command returns the width of the text in *Scope*. The width is returned in the units specified for the document's ruler.

If *Scope* equals -3, the command returns the width of the selected characters. If *Scope* equals -1, the command returns the longest text line in the 4D Draw area. If *Scope* equals 0, the command returns the longest line in the current selection. If *Scope* is greater than 0, the command returns the longest line in the object identified by the ID number passed as a parameter. If there is no object corresponding to this ID number, the command returns -32000.

DR ZOOM

DR ZOOM(*Area; Zoom; Horizontal; Vertical; Placement*)

Parameters	Type	Description
Area	Longint variable	4D Draw area
Zoom	Number	Zoom percentage
Horizontal	Number	Horizontal coordinates
Vertical	Number	Vertical coordinates
Placement	Integer	0=Centered, 1=Top and left aligned

This command allows you to enlarge the 4D Draw area to *Zoom* percent.
If *Placement* equals 0, the point at (*Horizontal, Vertical*) is centered in the visible area of the 4D Draw area.
If *Placement* equals 1, the point at (*Horizontal, Vertical*) is placed in the top left corner of the area.

Example

This procedure zooms the selected object so that it takes up the largest possible space in the visible 4D Draw area.

```
DR ZOOM (MyArea;100;0;0;0)                    `Reset zoom percentage in area to 100%
DR GET BOUNDARY (MyArea;0;ObjLeft;ObjTop;ObjRight;ObjBottom)
                                              `Get coordinates of the selected object
ObjWidth:=ObjRight-ObjLeft                     `Calculate width of object
ObjHeight:=ObjBottom-ObjTop                    `Calculate height of object
DR GET AREA BOUNDARY (MyArea;AreaLeft;AreaTop;AreaRight;AreaBottom)
                                              `Get coordinates of the visible part of the 4D Draw area
AreaWidth:=AreaRight-AreaLeft                  `Calculate width of the area
AreaHeight:=AreaBottom-AreaTop                 `Calculate height of the area
ObjRatio:=ObjWidth/ObjHeight                   `Calculate ratio of the object
AreaRatio:=AreaWidth/AreaHeight                `Calculate ratio of the area

If (ObjRatio>AreaRatio)
  Zoom:=100*AreaWidth/ObjWidth
  If (Zoom>800)
   Zoom:=800
  End if
Else
  Zoom:=100*AreaHeight/ObjHeight
  If (Zoom>800)
   Zoom:=800
  End if
End if

CoordX:=(0.5*ObjWidth)+ObjLeft
CoordY:=(0.5*ObjHeight)+ObjTop
DR ZOOM (MyArea;Zoom;CoordX;CoordY;0)
```

DR Get zoom

DR Get zoom(*Area*) -> Number

Parameters	Type	Description
Area	Longint variable	4D Draw area

DR Get zoom returns the zoom percentage for *Area*. The zoom percentage returned by this command is the number displayed in the lower left corner of *Area*.

DR SET DISPLAY

DR SET DISPLAY(*Area;OptionNum; Display*)

Parameters	Type	Description
Area	Longint variable	4D Draw area
OptionNum	Integer	Option Number
Display	Integer	0=Hide, 1=Display, 2=Toggle

This command allows you to manage the display options for *Area*, including whether rulers, tools, and other items are displayed. Some of these options could be set in version 1.0 using the DR DISPLAY OPTIONS command.

Options for DR SET DISPLAY and DR Get display

Number	Option	Comments
1	Rulers	
2	Ruler lines	
3	Page breaks	
4	Coordinates	
5	Menu bar	
6	Tool palette	
7	Scroll bars	
8	Area border	
9	Print area	New in version 1.1
10	Paper area	New in version 1.1
11	Paste board	New in version 1.1
12	Zoom box	New in version 1.1
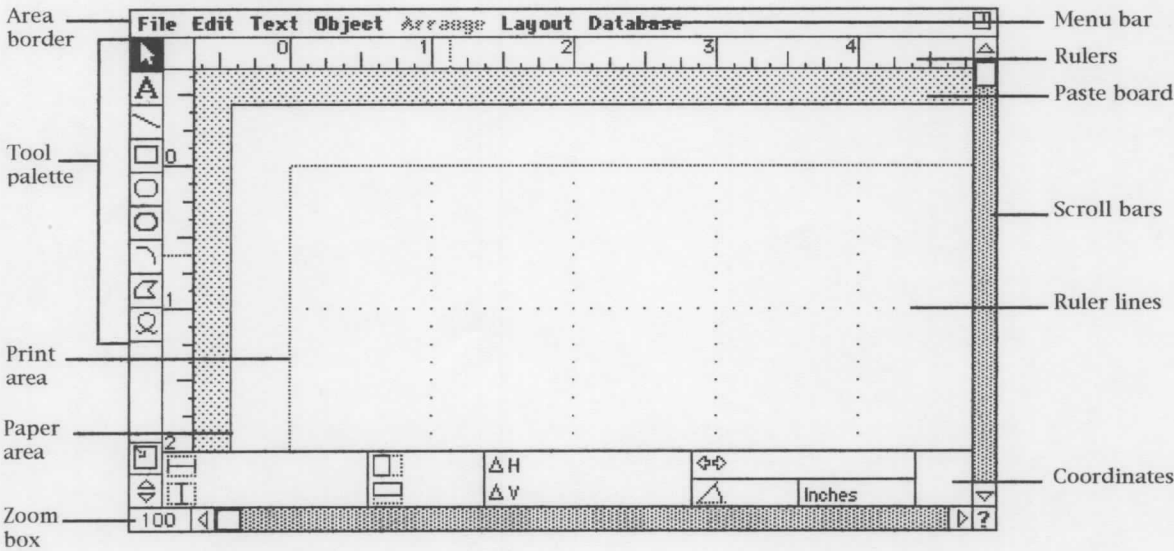
DR Get display

DR Get display(*Area; OptionNum*) -> Integer

Parameters	Type	Description
Area	Longint variable	4D Draw area
OptionNum	Integer	Option number

This command returns whether or not the display option *OptionNum* is displayed in *Area*. If it is displayed, DR Get display returns 1. If it is hidden, DR Get display returns 0.

DR PRINT MERGE

DR PRINT MERGE (*Area, FileNum; Status; PrintDialog*)

Parameters	Type	Description
Area	Longint variable	4D Draw area
FileNum	Integer	File Number
Status	Integer	0=No, 1=Yes
PrintDialog	Integer	0=Without dialog box, 1=With dialog box

This command allows you to print merge the current selection of the file *FileNum*. The document used for the print merge is specified by *Area*.

If *FileNum* equals 0, the standard print merge dialog is displayed (for more information about this dialog box, refer to the "Modifications to Dialog Boxes" earlier in this addendum).

If *Status* equals 1, a dialog box appears, allowing the user to cancel the printing in progress by pressing Command-Period. If the user cancels printing, an error 55 is returned by DR Error. If *Status* equals 0, this dialog is not displayed and printing cannot be cancelled.

PrintDialog determines whether the standard Print File dialog box is displayed or not.

If *PrintDialog* equals 0, the standard Print File dialog box is not displayed, and printing begins immediately. If *PrintDialog* equals 1, the standard Print File dialog box is displayed.

DR POLYGON CURVE

DR POLYGON CURVE (*Area;X1;Y1;X2;Y2;TargetX;TargetY;Type*)

Parameters	Type	Description
Area	Longint variable	4D Draw area
Control Point1.X	Number	X coordinate of control point 1
Control Point1.Y	Number	Y coordinate of control point 1
Control Point2.X	Number	X coordinate of control point 2
Control Point2.Y	Number	Y coordinate of control point 2
Ending X	Number	X coordinate of the ending point
Ending Y	Number	Y coordinate of the ending point
Mode	Integer	0=Absolute, 1=Relative

This command allows you to draw a curve. A line begins from the starting point as if it were heading for control point 1. A second line begins from the ending point and heads in the direction control point 2. The lines are curved so that they will intersect halfway between the starting point and the ending point.

Example

The following procedure creates a curved polygon using several straight lines and one curved line.

```
DR START POLYGON (MyArea)
DR POLYGON LINE (MyArea;1;1;0)
DR POLYGON LINE (MyArea;3;1;0)
DR POLYGON LINE (MyArea;6;4;0)
DR POLYGON LINE (MyArea;5;5;0)
DR POLYGON CURVE (MyArea;6;2;2;6;2;3;0)
DR POLYGON LINE (MyArea;1;1;0)
$PolyID:=DR End Polygon (MyArea)
```

```
(6,2)

(2,3)

(3.5,4)

(5,5)

(2,6)

100
```
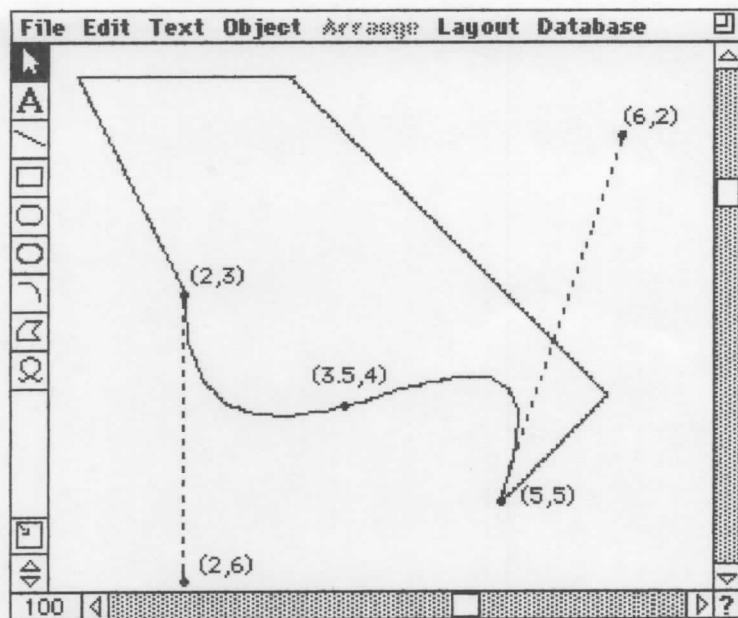
Point (3.5,4) is halfway between points (2,3) and (5,5), and is the point where the two curved lines meet.

4. Modifications to Existing Commands

DR SET PREFERENCES

[handwritten note: NB: La 9 parametri in realtà - il # 9 (integer) cos'è?]

DR SET PREFERENCES (*Area;Order;PICTs;LockAlerts;AutoScroll;Variable; Confirm; {Format}*)

Parameters	Type	Description
Area	Longint variable	4D Draw area
Order	Integer	Print direction, -1= No change
PICTs	Integer	0 = Picture, 1= Objects, -1 = No change
LockAlerts	nteger	0 = Off, 1 = On, -1 = No change
AutoScroll	nteger	0 = Off, 1 = On, -1 = No change
Variable	Integer	0 = Fixed, 1 = Variable
Confirm	Integer	0 = Without confirmation, 1 = With confirmation, -1=No change
Format	Integer	Format in which the document is saved, -1=No change

This command allows you to set several options for the 4D Draw area *Area*.The two new parameters to this command are *Confirm* and *Format*.

If the area is not auto-saved, the *Confirm* parameter allows you to determine whether a confirmation dialog appears when you have modified the 4D Draw area and accept a record, or when in User Mode you have chosen **4D Draw** from the **Windows** menu and you have modified the 4D Draw area. By default, a confirmation dialog box appears, asking whether you would like to save the document in the 4D Draw area. If *Confirm* equals 0, the confirmation dialog box does not appear. If *Confirm* equals 1, the confirmation dialog box appears.

The optional *Format* parameter allows you to determine how the document in the 4D Draw area is saved. If *Format* equals 0, the image and data are both saved (the default). If *Format* equals 1, only the image (PICT) is saved. If *Format* equals 2, only the data is saved. Where speed is a concern, this is the best save method.

If you omit the *Format* parameter, *Format* is assumed to be 0.

If there is not enough memory for the save method you chose, you are presented with a dialog box that allows you to modify your choice.

All of the parameters to this command can be set in the User environment using the Preferences dialog box.

DR GET PREFERENCES

DR GET PREFERENCES (*Area;Order;PICTs;LockAlerts;AutoScroll;Variable;Confirm;{Format}*)

Parameters	Type	Description

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Area	Longint variable	4D Draw area
Order	Integer	Print direction
PICTs	Integer	0 = Picture, 1= Objects
LockAlerts	Integer	0 = Off, 1 = On,
AutoScroll	Integer	0 = Off, 1 = On,
Variable	Integer	0 = Fixed, 1 = Variable
Confirm	Integer	0 = Without confirmation, 1= With confirmation
Format	Integer	Format in which the document is saved

This command returns the values of the preferences set for the 4D Draw area *Area*. The two new return parameters are *Confirm* and *Format*.

The *Confirm* parameter determines whether a confirmation dialog appears when you accept a record. By default, a confirmation dialog box appears asking whether you would like to save the document in the 4D Draw area. If *Confirm* equals 0, the confirmation dialog box does not appear. If *Confirm* equals 1, the confirmation dialog box appears.

The optional *Format* parameter determines how the document in the 4D Draw area is saved. If *Format* equals 0, the image and data are both saved (the default). If *Format* equals 1, only the image (PICT) is saved. If *Format* equals 2, only the data is saved. In this case, the data concerning the objects in the 4D Draw area is not saved. Where speed is a concern, this is the best save method.

DR DISPLAY OPTIONS

DR DISPLAY OPTIONS (*Area;Options;Mode*)

Parameter	Type	Description
Area	Longint variable	4D Draw area
Options	Integer	Code for display options
Mode	Integer	0 = Hide, 1 = Show, 2 = Toggle

DR DISPLAY OPTIONS controls which display options are shown in *Area*. This command has been superceded by the DR SET DISPLAY command, but remains in 4D Draw for compatibility reasons.

The four new parameters that appear in DR SET DISPLAY can also be used with DR DISPLAY OPTIONS.

Code	Option	Comment
-1	All options	
1	Rulers	
2	Ruler lines	
4	Page breaks	
8	Coordinates	
16	Menu bar	
32	Tool palette	
64	Scroll bars	
128	Area border	
256	Print area	New in version 1.1
512	Paper area	New in version 1.1
1024	Paste board	New in version 1.1
2048	Zoombox	New in version 1.1

DR PRINT (*Area; Status; {Dialog}*)

Parameters	Type	Description
Area	Longint variable	4D Draw area
Status	Integer	0 = No, 1 = Yes
Dialog	Integer	0 = With dialog box, 1 = With dialog box

This command takes a new optional parameter, *Dialog*. If *Dialog* equals 0, the standard Print File dialog box does not appear and printing begins immediately. If *Dialog* equals 1, the standard Print File dialog box appears.

Values for the Scope Parameter

The *Scope* parameter accepts the following values:

>0	ID number
0	Selected objects
-1	All objects in the document
-2	Default values
-3	Selected characters
-4	Foreground objects
-5	Background objects

NOTE: *Objects can be on the background and be hidden at the same time.*

5. New Codes for 4D Draw

Attribute Codes

The following new attribute codes are available for the DR ATTRIBUTE TO ARRAY, SELECT BY ATTRIBUTE, and ARRAY TO ATTRIBUTE commands:

27	Objects visible/invisible (0=invisible, 1=visible)
28	Objects in the background or foreground (0=foreground, 1=background)

The objects that are hidden (invisible) or part of the background can only be selected using the language. When selecting objects that are hidden or on the background, it is strongly recommended that you perform the following steps before returning control to the user.

1. Select the object(s).
2. Perform the action on the object(s).
3. Deselect the object(s).

The last step is important because the user may inadvertently perform an action on the objects if they remain selected.

Menu Item Codes

The codes for the new menu items are the following:

File Menu
Go To Full Page	1011	(The number remains the same even if the position of the menu item changed.)
Print Merge...	1012	

Object Menu
Hide	4020
Show All	4021

Arrange Menu
Add to Background	5014

Layout Menu
Release Background	6014

Database Menu
Binding...	7014

Error Codes

Eleven new error codes are used by 4D Draw 1.1:

71	This object has editing locked.
72	This operation would cause the maximum number of objects to be exceeded.
73	All groups are locked.
74	There are no foreground objects.
75	There are no background objects.
76	Bitmapped image is too large.
77	There are no visible objects.
78	There are no invisible objects.
79	There are no files.
80	Zoom percentage out of range.
81	File path name exceeds 255 characters.
82	This polygon needs a starting point.

Event Codes

-1		All
0		No event
1	*(4)*	Creation of an area
2		Deletion of an area ✓
4		Activation of an area (either clicked or brought to theforeground)
8		Deactivation of an area
16		Creation of an object
32		Deletion of an object
64		Command-click
128		Movement of an object
256		Resizing of an object
512		Rotation of an object
1024		Changing of the selection *(De-Select = Click out background)*
2048		Double-clicking
4096		Reshaping of an object (New in version 1.1)

6. Additional Changes

The Default Area

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See the "New Commands" section.

Disabling Access to Text Objects

If you want to disable access to text object attributes, it is necessary to deactivate not only the menu items concerning the text attributes in the **Text** menu, but also the menu item in the **Object** menu. A text object is accessible by either means.

Another solution is to install a procedure using DR ON MENU to test for the selection of the **Attributes** menu item in the **Object** menu. You need only determine the type of the selection made before the menu selection. If it contains an object of type text, you can display an alert. If not, you can execute the menu item using the DR DO COMMAND command.

Selection by Attributes

When using **Select by Attributes** in the **Edit** menu, you can select a group only by the following attributes: **Name**, **Type**, and **Rotation**.

Access to the Format Check Box on the Save Dialog Box

The check box in the Save dialog box that allows you to save selected elements in either the PICT or MacPaint format is available only if there are objects selected in the document.